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EXAMINER	
HURST, JONATHAN M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,230	HAGER ET AL.	
	Examiner	Art Unit	
	JONATHAN M. HURST	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/28/2005 and 11/04/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Coatsworth (EP 0319131).

Regarding claim 34, Coatsworth discloses a method of collecting and dispensing a powdered material, the method comprising: (See Col. 1 Lines 1-5)

(a) collecting, substantially simultaneously, a plurality of measured quantifies of the powdered material in a plurality of collection cavities, wherein each of said plurality of collection cavities is in fluid communication with, via an inlet within each cavity, a vacuum source; and (See Col. 3 Line 35- Col. 4 Line 12 where collection cavities are in communication with a vacuum source, Col. 5 Line 31-36 where a plurality of collection cavities are in communication with a powder hopper, and Col. 7 Lines 42-55 where a plurality of collection cavities are filled with powder)

(b) dispensing, substantially simultaneously, the plurality of measured quantities of the powdered material by terminating, substantially simultaneously, fluid communication between each of said plurality of collection cavities and the vacuum source while each of the plurality of collection cavities is oriented such that gravity pulls each of the plurality of measured quantifies of the powdered material out of each of the plurality of collection cavities; (See Col. 5 Line 53- Col. 6 Line 8 and Col. 7 Lines 18-28)

wherein each of the plurality of collection cavities comprises a filter to substantially prevent said powdered material from entering its corresponding inlet. (See Col. 3 Lines 35-50 where a filter is provided on the end of a piston)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-14, 16-18, and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) and further in view of Parkin (GB 2327628).

Regarding claim 1 Coatsworth discloses an apparatus for automatically collecting, substantially simultaneously, a plurality of measured quantities of a powdered material and dispensing, substantially simultaneously, each of the plurality of measured quantities of the powdered material, the apparatus comprising:

(a) a plurality of collection cavities, each of said collection cavities comprising an inlet for fluid communication therein and a filter configured to prevent the powdered material from entering; (See Fig. 4 collection cavities 36 and Fig. 3 and Col. 3 Lines 35-50 where filters are placed on a piston in collection cavities)

b) a vacuum source, said vacuum source connected to each of the plurality of collection cavities via the inlet therein; and (See Col. Col. 3 Line 55 - Col. 4 Line 13)

Coatsworth does not disclose a control valve configured to establish or terminate fluid communication between the vacuum source and each of the plurality of collection cavities.

Parkin discloses an apparatus for automatically collecting measured quantities of a powdered material and dispensing the measured quantities of the powdered material comprising a collection cavity, a vacuum source, and a control valve configured to establish or terminate fluid communication between the vacuum source and each of the collection cavities. (See Fig. 8 collection cavity 71, vacuum source 77, and valve 81 also see Col. 12 Lines 67-71)

It would have been obvious to one of ordinary skill in the art at the time of invention to use a valve for establishing or terminating a vacuum source as described by Parkin in the apparatus of Coatsworth because doing so allows one to control direction and application of air using a vacuum as required by Coatsworth (See Coatsworth Col. 5 Line 46 – Col. 6 Line 8) and valves are known in the art to control vacuum air flow when dispensing powders.

Furthermore it is well known in the art that valves can be used to turn on and off the flow of a fluid such as air in a fluid line in many applications and as such it would have been obvious to one of ordinary skill in the art at the time of invention to use a valve to control the application of air from a vacuum source in the apparatus to Aronson.

Regarding claim 2, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the volume of each of the plurality of collection cavities is dynamically adjustable. (See Coatsworth Col. 4 Lines 17-44 where piston head is adjustable to change cavity volume)

Regarding claims 3 and 4, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the plurality of collection cavities are configured on a collection member such that when the collection member is registered with a multi- well vessel, each cavity of the plurality of collection cavities is positioned to dispense its corresponding quantity, of the plurality of measured quantities of the powdered material, into a corresponding well of the multi-well vessel. (See Coatsworth Fig. 3 where collection cavity 36 formed in a collection member 28 is fully capable of registering with a multi well vessel) wherein the multi-well vessel comprises at least one of an 8-well format vessel, a 24-well format vessel, a 96-well format vessel, a 384-well format vessel, and a 1536-well format vessel.

Regarding limitations recited in claims 3 and 4, which are directed to a manner of operating disclosed apparatus, i.e. registering a device with a multi-well plate and the size/type of the plate, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states

"Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Furthermore it is noted that the device of modified Coatsworth is fully capable of registering with any format of multi-well plate, and is registered with multiple wells, and it is well known in the art to dispense articles into multi-well plates such as in analytical, chemical, and biological testing and as such it would have been obvious to one of ordinary skill in the art at the time of invention to register said device with a an 8-well format vessel, a 24-well format vessel, a 96-well format vessel, a 384-well format vessel, and a 1536-well format vessel.

Regarding claims 5-7, modified Coatsworth discloses all the claim limitations as set forth above but does not specifically disclose the apparatus wherein each of the plurality of collection cavities is capable of holding between about 0.005cm3 and 2cm3 of the powdered material, wherein each of the plurality of collection cavities is capable of holding between about 0.01cm3 and 1cm3 of the powdered material, wherein one of the plurality of collection cavities is capable of holding between about 0.1cm3 and 0.5cm3 of the powdered material.

While modified Coatsworth does not specifically disclose said volume ranges it does disclose the volume of the collection cavities overlapping said range of volumes (See Coatsworth Col. 4 Lines 38-44). It would have been obvious to one of ordinary skill in the art at the time of invention to have selected the overlapping portion of the ranges disclosed by the reference because selection of overlapping portion of

ranges has been held to be a prima facie case of obviousness. *In re Malagari,* 182 USPQ 549.

Furthermore since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to change the volume of the collection cavity, since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Regarding claim 8, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein said collection member comprises:

(i) a plurality of holes, said plurality of holes slidably engage-able with; (See Coatsworth Fig. 3 where collection member 28 has a plurality of holes and slides with plunger 32)

(ii) a plurality of plungers, each of said plurality of plungers comprising a tube open at both ends, said filter affixed at the end of the tube that comes in proximity to the

powdered material during collection and the other end of the tube in fluid communication with the vacuum source (See Coatsworth Fig. 3 where collection member 36 has a plunger 32 with a tube and filter 34 at one end and vacuum source connected through 40 at the other and Fig. 4 where there are multiple plungers in cavities 36)

wherein the volume of each of the plurality of collection cavities is defined substantially by the volume from the aperture of its corresponding hole to the face of its corresponding plunger. (See Fig. 3 where collection cavity 36 is defined by space between plunger and outside aperture)

Regarding claims 9-11, modified Coatsworth discloses all the claim limitations as set forth above but does not specifically disclose the apparatus wherein the filter is capable of excluding particles with an average particle size of between about 1 um and 1000um, wherein the filter is capable of excluding particles with an average particle size of between about 1um and 500um, and wherein the filter is capable of excluding particles with an average particle size of between about 10um and 500um.

Since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to change the size of the pores in a porous filter, since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as

being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Regarding claim 12, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the filter comprises at least one of a semi-rigid screen, a sieve, a collection of micro-tubes, a perforated ceramic, a perforated plastic, a perforated glass, a porous cement, and a porous metal. (See Coatsworth Col. 3 Lines 35-50 where piston head is porous and it is inherent that a porous material is at least a semi-rigid screen, a sieve, and or a collection of micro-tubes)

Regarding claims 13 and 14, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the plurality of plungers are affixed to and in fluid communication with-a manifold, said manifold serving to establish fluid communication between each of the plurality of plungers and the vacuum source (See Fig. 3 maniford 22 establishing communication with plungers 32 and vacuum source through 40)

Modified Coatsworth does not disclose the apparatus wherein the manifold further comprises a plurality of valves, said plurality of valves configured such that fluid communication between the vacuum source and all or a sub-set of the plurality of collection cavities can be shut off.

Parkin discloses the use of a manifold wherein a plunger is affixed to and in fluid communication with a manifold, said manifold serving to establish fluid communication between said plunger and the vacuum source (See Fig. 2 manifold 1 connecting plunger 13 to vacuum source 2) wherein the manifold further comprises a plurality of valves, said plurality of valves configured such that fluid communication between the vacuum source and all or a sub-set of the of collection cavities can be shut off. (See Fig. 3 where control circuit manifold comprises valves 6)

It would have been obvious to one of ordinary skill in the art to use the multiple valves in a manifold of Parkin in the apparatus of modified Coatsworth because using a valves in a manifold are known in the art to effectively control the flow of air to and from a plunger for dispensing powders as required by modified Coatsworth. (See Coatsworth Col. 5 Line 47- Col 6 Line 8 where the application of vacuum air is controlled)

Regarding claim 16, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the relative position of each plunger within its corresponding hole is established by an adjustment mechanism configured to vary

the distance between the manifold and the collection member. (See Coatsworth Fig. 3 adjustment mechanism 26)

Regarding claim 17, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein each plunger is capable of displacing each of the plurality of measured quantities of the powdered material from the corresponding hole wherein said each plunger resides. (See Fig. 3 where plunger 32 displaces powdered material from a corresponding hole when air is passed through said plunger)

Regarding claim 18, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the adjustment mechanism comprises at least one of a lead screw and a pneumatic cylinder. (See Fig. 3 lead screw 50)

Regarding claims 29 and 30, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the collection member further comprises a plurality of guides, each guide of said plurality of guides residing at the aperture of each of the plurality of collection cavities, each guide of said plurality of guides configured to aide in registration of its corresponding collection cavity with a receiving vessel. (See Coatsworth Fig. 7 guide 75 configured at aperture of collection cavity 36) wherein the collection member further comprises an alignment guide, said alignment guide configured to aide in registration of the collection member with the

multi-well vessel. (See Coatsworth Fig. 7 guide 75 configured at aperture of collection cavity 36 to aid in registration with vessel 62)

Regarding limitations recited in claims 29 and 30 which are directed to a manner of operating disclosed apparatus, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Regarding claims 31-33, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.1cm3, capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.005cm3, and capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.001cm3. It is noted that the device of modified Aronson can collect powder and if the amount collected is the amount desired it is capable of perfectly collecting a desired volume of powder.

Regarding limitations recited in claims 31-33 which are directed to a manner of operating disclosed apparatus, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) and in view of Parkin (GB 2327628) as applied to claims 1-14, 16-18, and 29-33 above and further in view of Morris (US 4,850,259)

Regarding claim 15, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus, wherein the plurality of collection cavities are arranged in various forms, and the sub-set comprises one or more rows, one or more columns, or combinations thereof of said form. (See Fig. 8 and Fig. 9 where collection cavities are arranged in various forms and subsets of cavities comprise on or more rows and or columns)

Modified Coatsworth does not specifically disclose the plurality of collection cavities arranged in a matrix.

Morris discloses an apparatus for automatically collecting, substantially simultaneously, a plurality of measured quantities of a powdered material and dispensing, substantially simultaneously, each of the plurality of measured quantities of the powdered material, the apparatus comprising: a plurality of collection cavity containing pistons wherein the collection cavities arranged in a matrix. (See Abstract, Col. 3 Lines 5-14, Fig. 1, and Fig. 2 where collection cavities 15 are arranged in an array matrix in order to dispense into array 8)

It would have been obvious to one of ordinary skill in the art at the time of invention to arrange the plurality of collection cavities in a matrix as described by Morris in the apparatus of modified Coatsworth as a collection cavities are known in the art to be arranged in a matrix (See Morris Col. 3 Lines 5-1) when powder is needed to be dispensed into multiple containers as required by modified Coatsworth.

Furthermore it is noted it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of modified Coatsworth to have a matrix of collection cavities, as such modification would involve a mere change in configuration. It has been held that a change in configuration of shape of a device is obvious, absent persuasive evidence that a particular configuration is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

7. Claims 19-21 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) and in view of Parkin (GB 2327628) as applied to claims 1-14, 16-18, and 29-33 above and further in view of Fermier et al. (US 2002/0134591)

Regarding claim 19, modified Coatsworth discloses all the claim limitations as set forth above.

Modified Coatsworth does not disclose the apparatus further comprising a controller, said controller comprising:(a) a plurality of solenoids for controlling the control valve and said plurality of valves; (b) the vacuum source; c) a positive pressure source for delivering a positive pressure of a gas; And (d) an associated logic configured to automatically control the plurality of solenoids based on a manual switch control, a pre-programmed algorithm, or both; wherein the control valve, the plurality of valves, and combinations there of are used to control fluid communication between each of the collection cavities, via their respective inlets, and either the vacuum source or the positive pressure source.

Fermier et al. discloses an apparatus for automatically collecting and dispensing a powder comprising a controller, said controller comprising: (See Abstract and Fig. 1) (a) a plurality of solenoids for controlling the control valve and said plurality of valves; (See Fig. 1 62 and [0036] where actuator is solenoid valves)

(b) the vacuum source; (See Fig. 1 70)

(c) a positive pressure source for delivering a positive pressure of a gas; (See Fig. 2 positive pressure source 99)

And (d) an associated logic configured to automatically control the plurality of solenoids based on a manual switch control, a pre-programmed algorithm, or both; wherein the control valve, the plurality of valves, and combinations there of are used to control fluid communication between each of the collection cavities, via their respective inlets, and either the vacuum source or the positive pressure source. (See Fig. 1, Fig. 2, and [0039] where controller 59 and comprises a processor or associated logic for automatically controlling the device)

It would have been obvious to one of ordinary skill in the art at the time of invention to use the controller and controlling components as described by Fermier in the apparatus of modified Coatsworth because the use of controllers is well known in the powder dispensing art to automatically control collection and dispensing devices in order to reduce accurately perform collection and dispensing operations and reduce operator intervention.

Furthermore it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the device of modified Coatsworth automatic,

since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. In re Venner, 120 USPQ 192 (CCPA 1958); In re Rundell, 9 USPQ 220 (CCPA 1931).

Regarding claim 20, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the vacuum source is capable of producing both a high vacuum and a low vacuum, and the positive pressure source is capable of delivering both a high-pressure flow of the gas and a low-pressure flow of the gas. (See [0040] and [0058] where vacuum and positive pressure source are fully capable of delivering both high and low vacuums and flows respectively)

Regarding claim 21, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus wherein the gas comprises at least one of air and an inert gas. (See Col. 5 Lines 53-58 where gas is air and/or various inert gasses)

Regarding claim 25 modified Coatsworth discloses all the claim limitations as set forth above but does not disclose the apparatus wherein the collection member, the manifold, and the manual switch control are combined in a hand-held unit, said hand-held unit in electrical and fluid communication with the controller.

Parkin discloses an apparatus for collecting and dispensing a powdered material using a handheld device comprising a manifold switch and controller. (See Abstract,

Fig. 2, manifold 1, control circuit 3 and switch 4, and Fig. 3 manifold 1, control circuit in communication with 1)

It would have been obvious to one of ordinary skill in the art at the time of invention to make the apparatus of modified Coatsworth a handheld device as described by Parkin because it is known in the art to transfer powders as required by Coatsworth (See Col. 1 Lines 1-5) using handheld devices (See Parkin Abstract) and handheld devices provide a small and portable way of performing a given method.

Furthermore it is noted that making a device handheld involves merely a change in size or dimension and since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to perform the method of modified Coatsworth by changing the size of the device of modified Coatsworth to make it handheld, since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Regarding claim 26, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus further comprising an automated mechanism configured to collect the powdered material in all or the sub-set of the plurality of collection cavities, move the aperture of each of the plurality of collection cavities and the squeegee across one another, and deliver each of the plurality of measured quantities of the powdered solid, via the plurality of collection cavities, to a plurality of vessels corresponding to all or the sub-set of the plurality of collection cavities containing the powdered material.(See Coatsworth Col. 1 Lines 1-5 where the apparatus is a machine which is itself an automated mechanism and thus modified Coatsworth comprises an automated mechanism capable of performing claimed actions)

Furthermore assuming even if Coatsworth does not disclose said apparatus comprising an automated mechanism it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the device of modified Coatsworth automatic, and it is inherent that when a device is made automatic it must comprise some form of automated mechanism, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. In re Venner, 120 USPQ 192 (CCPA 1958); In re Rundell, 9 USPQ 220 (CCPA 1931).

8. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) and in view of Parkin (GB 2327628) further in view of Fermier et al. (US 2002/0134591) as applied to claims 19-21 and 25-26 above and further in view of Duffield (US 6,886,612)

Regarding claims 22-24, modified Coatsworth discloses all the claim limitations as set forth above as well as the apparatus further comprising a supply bin for holding the

powdered material, said supply bin comprising: (See Coatsworth Fig. 4 supply bin 64)

(a) a powder compartment sized and shaped to accommodate a supply of the powdered material and the collection member when collecting the powdered material in the plurality of collection cavities therein; and (See Fig. 4 where powder compartment 64 accommodates multiple collection members 36 for collecting powder)

Modified Coatsworth does not disclose b) a squeegee configured to remove at least a portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities, during collection, when the aperture of each of the plurality of collection cavities and the squeegee are moved across one another, the apparatus configured such that the portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities, after removed by said squeegee, is returned into the powder compartment, or the apparatus further

comprising a powder catch compartment configured to catch any of the powdered material that does not fall back into the powder compartment when the aperture of each of the plurality of collection cavities and the squeegee are moved across one another.

Duffield discloses an apparatus for collecting and dispensing a powdered material (See Abstract) comprising a powder compartment, squeegee, and an aperture of collection cavities wherein the squeegee is used to remove at least a portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities and the apparatus configured such that the portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities, after removed by said squeegee, is returned into the powder compartment the apparatus further comprising a powder catch compartment configured to catch any of the powdered material that does not fall back into the powder compartment when the aperture of each of the plurality of collection cavities and the squeegee are moved across one another. (See Col. 6 Lines 13-23 where powder is wiped from collection cavity aperture using a wire or blade (squeegee) over a powder reservoir where powder is held and powder falls back into powder reservoir) It is noted that it is inherent that whatever powder does not fall back into the powder reservoir falls on some form of catch compartment as any area where powder falls is designed and inherently capable of catching said powder.

It would have been obvious to one of ordinary skill in the art at the time of invention to use a squeegee for moving across the aperture of a collection cavity to remove excess powder and collecting said powder in powder compartment or catch as described by Duffield in the apparatus of modified Coatsworth because squeegees are known in the art to be used in powder collection and dispensing devices to remove excess powder and a squeegee allows one to more accurately dispense a desired volume of powder, as required by modified Coatsworth (See Coatsworth Col. 1 Lines 1-5), by removing excess powder when the volume of powder desired is defined by the volume of a collection cavity as described by Coatsworth (See Coatsworth Col. 1 Lines 30-41).

9. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) and in view of Parkin (GB 2327628) as applied to claims 1-14, 16-18, and 29-33 above and further in view of Duffield (US 6,886,612)

Regarding claims 27 and 28, modified Coatsworth discloses all the claim limitations as set forth above but does not disclose the apparatus wherein at least one of the collection member and each of the plurality of collection cavities comprise an anti-static material and wherein the anti-static material comprises at least one of a plastic, a metal, a glass, and a ceramic.

Duffield discloses the use of a powder dispensing apparatus comprising tubes and pistons wherein parts of the apparatus touching the powder, which includes the tubes, are coated with an anti-static polymer. (See Fig. 1A-1D and Col. 9 Lines 12-22)

It would have been obvious to one of ordinary skill in the art at the time of invention to coat the collection cavities of modified Coatsworth with anti-static polymers as described by Duffield as anti-static polymers are known in the art to reduce the tendency of the dispensed material to stick to the apparatus which allows one to more accurately dispense powder.

10. Claims 35-37, 40-46, and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) as applied to claim 34 above.

Regarding claim 35, Coatsworth discloses all the claim limitations as set forth above as well as the method wherein the volume of each of the plurality of collection cavities is dynamically adjusted (See Col. 4 Lines 17-44 where volume of plurality of collection chamber can be changed according to desired volume of powder)

While Coatsworth may not specifically teach the volume of each of the plurality of collection cavities is dynamically adjusted during (a) it would be obvious to do so since the desired volume of powder to be dispensed is measured according to an adjusted size of a cavity and once powder has already filled the cavity and said powder is dispensed, or being dispensed, if cavity volume is adjusted said cavity will not have

dispensed a volume of powder equaling the total volume of the cavity and thus desired amount will not have been dispensed. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to adjust the cavity volume before or during collection of the powder, i.e. during (a), as changing the volume of the cavity after collection of the powder would not produce the desired result of dispensing an accurate desired dose of powder equal to a cavity volume.

Furthermore while the reference does not explicitly disclose the volume of each of the plurality of collection cavities is dynamically adjusted during (a) it is noted that selection of any order of performing disclosed process steps is prima facie obvious in the absence of new or unexpected results. See Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to dynamically adjust the volume of the cavities during (a), as it amounts merely to change of the order of performing disclosed process steps in the absence of new or unexpected results.

Regarding claims 36 and 37, modified Coatsworth discloses all the claim limitations as set forth above as well as the method further comprising applying a positive pressure of a gas to each of said collection cavities, via the inlet within each

cavity, to facilitate removal of each of the plurality of measured quantifies of the powdered material therein and wherein the gas comprises at least one of air and an inert gas. (See Col. 5 Line 53- Col. 6 line 8 where air and other inert gasses are blown into collection cavity to remove powder)

Regarding claims 40-42, modified Coatsworth discloses all the claim limitations as set forth above but does not specifically disclose the method wherein each of the plurality of collection cavities is capable of holding between about 0.005cm3 and 2cm3 of the powdered material, wherein each of the plurality of collection cavities is capable of holding between about 0.01cm3 and 1cm3, and wherein each of the plurality of collection cavities is capable of holding between about 0.1cm3 and 0.5cm3.

While Coatsworth does not specifically disclose said volume ranges it does disclose the volume of the collection cavities overlapping said range of volumes (See Col. 4 Lines 38-44). It would have been obvious to one of ordinary skill in the art at the time of invention to have selected the overlapping portion of the ranges disclosed by the reference because selection of overlapping portion of ranges has been held to be a prima facie case of obviousness. *In re Malagari,* 182 USPQ 549.

Furthermore Since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to change the volume of the collection cavities to collect a specific amount of material, since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only

difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984). It is well known in the art that a larger volume cavity can hold more of a desired amount of substance than a smaller volume cavity

Regarding claims 43-45, modified Coatsworth discloses all the claim limitations as set forth above but does not specifically disclose the method wherein the filter is capable of excluding particles with an average particle size of between about 1um and 1000um, wherein the filter is capable of excluding particles with an average particle size of between about 1um and 500um, and wherein the filter is capable of excluding particles with an average particle size of between about 10um and 500um.

Since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to change the pore size of the filter for excluding particles as described by Coatsworth (See Col. 3 Lines 35-50), since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would

not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Furthermore it is well known in the art that when using a filter to exclude a particle, as required by Coatsworth (See Coo. 3 Lines 35-50) to alter the porosity of the filter in order to exclude a desired particle of a desired size in a given application and when the filter is only allowing air to pass to design a filter to exclude very small particle sizes. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to design the filter of Coatsworth to exclude the particle size anywhere between 1um and 1000um, 1um and 500um, and 10um and 500um in order to exclude a desired particle size and allow air to pass.

Regarding claim 46, modified Coatsworth discloses all the claim limitations as set forth above as well as the method wherein a sub-set of the plurality of collection cavities are used to collect the powdered material during (a) and dispense the powdered material during (b) (See Col. 7 Lines 42-55 and Fig. 4 where a plurality of collection cavities are filled with powder and only a subset of the cavities are in communication with powder hopper 64 and as such only a subset can be filled during (a) and see Col. 7 Lines 18-28 and Fig. 8 where a subset of the total collection cavities are used to dispense powder)

Regarding claims 52-54, modified Coatsworth discloses all the claim limitations as set forth above as well as the method wherein each of the plurality of collection

cavities is capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.1cm3, wherein each of the plurality of collection cavities is capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.005cm3, and wherein each of the plurality of collection cavities is capable of collecting each of the plurality of measured quantities of the powdered material to within about + or - 0.001cm3. It is noted that the device of Coatsworth collects a desired amount powder in a collection cavity and if the amount that is collected in the cavity, regardless of accuracy or consistency, is the amount desired it is capable of perfectly collecting a desired volume of powder.

11. Claims 38-39 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) as applied to claims 35-37, 40-46, and 52-54 above, and further in view of Morris (US 4,850,259).

Regarding claims 38, modified Coatsworth discloses all the claim limitations as set forth above but does not disclose the method wherein the plurality of collection cavities are configured on a collection member such that when the collection member is registered with a multi- well vessel, each cavity of the plurality of collection cavities is configured to dispense its corresponding quantity, of the plurality of measured quantities of powdered material, to a corresponding well of the multi-well vessel and

Morris discloses a method of collecting and dispensing a powdered material wherein a collection member is registered with a multi-well vessel and a corresponding cavity is configured to dispense its corresponding quantity, of the plurality of measured quantities of powdered material, to a corresponding well of the multi-well vessel. (See Fig. 1, Fig. 2, and Col. 2 Line55 –Col. 3 Line 30 where powder is placed in a plurality collection cavities 17 in a collection member 13 and dispensed into multiple wells 10 in vessel 8)

It would have been obvious to one of ordinary skill in the art at the time of invention to register a plurality of collection cavities with a multi-well vessel and dispense powder from a cavity to a corresponding well of the mutli-welled vessel as described by Morris in the method of Coatsworth because doing so is known in the powder dispensing art and allows one to quickly and reliably dispense a powder into multiple targets as required by Coatsworth. (See Coatsworth Col. 1 Lines 1-5 and Morris Col. 1 Lines 60-66)

Regarding claim 39, modified Coatsworth discloses all the claim limitations as set forth above and while modified Coatsworth does not specifically disclose the multi-well vessel comprises at least one of an 8-well format vessel, a 24-well format vessel, a 96-well format vessel, a 384-well format vessel, and a 1536-well format vessel it would have been obvious to one of ordinary skill in the art at the time of invention to use one of said formats as it is well known in the art that multi-well vessels can be used to receive

dispensed articles and the selection of one format of multi-well vessel over another similar format would have been obvious to one of ordinary skill in art depending upon the number and amount of articles that need to be dispensed.

Furthermore while modified Coatsworth does not disclose the exact format of vessels described, said reference does disclose a multi-well vessel comprising a number of wells. There is no significant difference between multi-well vessels having different number of wells. Further, the multi-well vessels as described were well known in the art at the time the invention was made. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of modified Coatsworth to have a any format of wells, as such modification would involve a mere change in configuration. It has been held that a change in configuration of shape of a device is obvious, absent persuasive evidence that a particular configuration is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Regarding claim 47, modified Coatsworth discloses all the claim limitations as set forth above but does not disclose the method wherein the plurality of collection cavities are arranged in a matrix, and the sub-set comprises one or more rows, one or more columns, or combinations thereof of the matrix.

Morris discloses an apparatus for automatically collecting, substantially simultaneously, a plurality of measured quantities of a powdered material and

dispensing, substantially simultaneously, each of the plurality of measured quantities of the powdered material, the apparatus comprising: a plurality of collection cavity containing pistons wherein the collection cavities are arranged in a matrix. (See Abstract, Col. 3 Lines 5-14, Fig. 1, and Fig. 2 where collection cavities 15 are arranged in an array matrix in order to dispense into array 8)

It would have been obvious to one of ordinary skill in the art at the time of invention to arrange the plurality of collection cavities in a matrix as described by Morris in the apparatus of modified Coatsworth as a collection cavities are known in the art to be arranged in a matrix (See Morris Col. 3 Lines 5-1) when powder needs to be dispensed into multiple containers as required by modified Coatsworth.

Furthermore it is noted it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus in the method of modified Coatsworth to have a matrix of collection cavities, as such modification would involve a mere change in configuration. It has been held that a change in configuration of shape of a device is obvious, absent persuasive evidence that a particular configuration is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

12. Claims 48-49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) as applied to claims 35-37, 40-46, and 52-54 above, and further in view of Duffield (US 6,886,612).

Regarding claims 48 and 49, modified Coatsworth discloses all the claim limitations as set forth but does not disclose the method further comprising moving a squeegee and the aperture of each of the plurality of collection cavities across each other, to remove at least a portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities, after (a) and before (b) wherein the portion of the powdered material that is removed, by moving the squeegee and the aperture of each of the plurality of collection cavities across each other, is collected for reuse.

Duffield discloses a method of collecting and dispensing a powdered material (See Abstract) comprising moving a squeegee and an aperture of collection cavities across each other, to remove at least a portion of the powdered material that protrudes beyond the aperture of each of the plurality of collection cavities, after powder is collected in said cavities and before being dispensed and wherein the portion of the powdered material that is removed, by moving the squeegee and the aperture of each of the plurality of collection cavities across each other, is collected for reuse. (See Col. 6 Lines 13-23 where powder is wiped from collection cavity aperture using a wire or blade (squeegee) over a powder reservoir where powder is held and powder inherently falls back into powder reservoir for reuse)

It would have been obvious to one of ordinary skill in the art at the time of invention to move a squeegee across the aperture of a collection cavity when powder is collected as described by Duffield in the method of Coatsworth because doing so is

known in the art to be performed during powder collection and dispensing in collection cavities and doing so allows one to more accurately dispense a desired volume of powder, as required by Coatsworth (See Coatsworth Col. 1 Lines 1-5), by removing excess powder when the volume of powder desired is defined by the volume of a collection cavity as described by Coatsworth (See Coatsworth Col. 1 Lines 30-41).

Regarding claim 51, modified Coatsworth discloses all the claim limitations as set forth above as well as the method performed using an automated mechanism configured to collect the powdered material in all or the sub-set of the plurality of collection cavities, move the aperture of each of the plurality of collection cavities and the squeegee across one another, and deliver each of the plurality of measured quantities of the powdered solid, via the plurality of collection cavities, to a plurality of vessels corresponding to all or the Sub-set of the plurality of collection cavities containing the powdered material. (See Coatsworth Col. 1 Lines 1-5 where a machine is an automated mechanism and the method of modified Coatsworth is carried out in said machine)

Furthermore assuming even if Coatsworth does not disclose said method being performed using an automated mechanism it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the device of modified Coatsworth automatic, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the

same result involves only routine skill in the art. In re Venner, 120 USPQ 192 (CCPA 1958); In re Rundell, 9 USPQ 220 (CCPA 1931).

13. Claims 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) as applied to claims 35-37, 40-46, and 52-54 above, and further in view of Goodman (US 5,343,909).

Regarding claim 55, modified Coatsworth discloses all the claim limitations as set forth above but does not disclose the method wherein the plurality of collection cavities is formed via deformation of a flexible membrane into a plurality of deformation cavities via at least a partial vacuum applied via each of said plurality of deformation cavities.

Goodman discloses a method of collecting and dispensing a material wherein a plurality of collection cavities is formed via deformation of a flexible membrane into a plurality of deformation cavities via at least a partial vacuum applied via each of said plurality of deformation cavities. (See Fig. 4, Figs. 15-17, and Col. 6 Lines 1-16 where collection cavities 23 are formed by deformation of a membrane 17 into deformation cavity 39 by an applied vacuum)

It would have been obvious to use a flexible membrane and deformation cavities as described by Goodman in the method of modified Coatsworth because deformable

membranes with applied vacuums are known in the art to accurately pick up and dispense materials(See Goodman Col. 1 Lines 8-25) as is required in the method of modified Coatsworth. (See Coatsworth Col. 1 Lines 1-5)

Regarding claim 56, modified Coatsworth discloses all the claim limitations as set forth above as well as the method wherein said flexible membrane deforms to conform to interior surface of each of said plurality of deformation cavities, whereby the volume of each of said plurality of deformation cavities substantially defines the volume of the powdered material collected in the corresponding collection cavity formed therein. (See Goodman Col. 4 Lines 58-68 and Fig. 4 where when vacuum is applied membrane will lie against or conform to the bulbous plunger which comprises an interior surface of the deformation cavity)

Regarding claim 57, modified Coatsworth discloses all the claim limitations as set forth above as well as the method wherein said flexible membrane deforms, but does not conform to the interior surface of each of said plurality of deformation cavities, whereby the volume of each of said plurality of collection cavities is defined substantially by the volume of the depression formed in the flexible membrane caused by deformation of said flexible membrane. (See Goodman Fig. 16 where membrane 17 does not conform to interior surface of a deformation cavity and volume of material dispensed is defined by deformation volume)

Regarding claim 58, modified Coatsworth discloses all the claim limitations as set forth above as well as the method wherein upon release of said at least partial vacuum the flexible membrane reforms substantially to the shape it possessed prior to application of said at least partial vacuum, thereby expelling each of the individual quantities of the powdered material collected. (See Goodman Col. 6 Lines 1-9 where cups are driven to a normal position after release of vacuum expelling collected material)

14. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coatsworth (EP 0319131) in view of Duffield (US 6,886,612). as applied to claims 48-49 and 51 above, and further in view of Parkin (GB 2327628)

Regarding claim 50 modified Coatsworth discloses all the claim limitations as set forth above but does not specifically disclose the method performed using a hand-held unit, said hand held unit comprising the plurality of collection cavities.

Parkin discloses a method of collecting and dispensing a powdered material using a handheld device. (See Abstract)

It would have been obvious to one of ordinary skill in the art at the time of invention to perform the method of modified Coatsworth using a handheld device as

described by Parkin because it is known in the art to transfer powders as required by Coatsworth (See Col. 1 Lines 1-5) using handheld devices (See Parkin Abstract) and handheld devices provide a small and portable way of performing a given method.

Furthermore it is noted that making a device handheld involves merely a change in size or dimension and since the instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art to perform the method of modified Coatsworth by changing the size of the device of modified Coatsworth to make it handheld, since such a modification would have involved a mere change in the size (or dimension) of a component. A change in size (dimension) is generally recognized as being within the level of ordinary skill in the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device, and the device having the claimed dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device, Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. HURST whose telephone number is (571)270-7065. The examiner can normally be reached on Mon. - Thurs. 6:30-5:00; Every Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. M. H./
Examiner, Art Unit 1797

/Jill Warden/
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